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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/584,745	07/10/2006	Ursula Ziegler	CICTG-23-PCT-US 2003/G018	3493

22827 7590 06/22/2010

DORITY & MANNING, P.A.
POST OFFICE BOX 1449
GREENVILLE, SC 29602-1449

EXAMINER	
FREEMAN, JOHN D	

ART UNIT	PAPER NUMBER
1787	

MAIL DATE	DELIVERY MODE
06/22/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/584,745	ZIEGLER ET AL.	
	Examiner	Art Unit	
	John Freeman	1787	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 May 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-4,7-13,15-17,19,21 and 22* is/are pending in the application.

4a) Of the above claim(s) *15-17* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2-4,7-13,19,21 and 22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 9 is objected to because of the following informalities: Applicant deleted “formulae” and replaced it with “formula”; however, the originally wording appears to be grammatically correct. Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. Claims 2-4, 7, 13, 19, 21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pfleger (US 5,792,532) in view of Memon et al. (US 5,451,624).

3. Regarding claims 2-3, 7, 13, and 21-22:

4. Pfleger discloses polymer tubing (col 1 ln 5-11). One embodiment comprises an outer layer of polyamide elastomer and an inner layer of polyoxymethylene (POM) copolymer (claims 9, 22, 30). Pfleger teaches the tubing can be made by coextrusion or blow molding (col 1 ln 15-22).

5. The POM includes impact modifiers (col 4 ln 56-60).

6. Pfleger is silent with regard to specific core-shell modifiers.

7. Impact modifiers based on methyl methacrylate-butadiene-styrene (MBS) core-shell polymers were well known. For example, Memon discloses the use of these polymers to improve the toughness of POM (col 2 ln 54-68). Memon teaches a loading of 5-50% by weight (col 3 ln 41-43).

8. At the time of the invention, it would have been obvious to one of ordinary skill in the art to use MBS core-shell polymers with the POM layer of Pfleger to improve the impact resistance and toughness of said layer.

9. The present claims are written in a product-by-process format. The examiner takes the position that the final composite structure of the tubing taught by Pfleger combined with Memon would be indistinguishable from the final product of the presently claimed invention, as both describe a layer of POM adhesively bonded to a polyamide elastomer.

10. With regard to the presently claimed tensile bond strength limits, the examiner takes the position that the composite tubing of Pfleger combined with Memon intrinsically satisfies Applicant's requirements given that the composite has the same structure as claimed.

11. Regarding claim 4:

12. The layers comprise modifiers such as stabilizers, plasticizers, pigments, impact modifiers, and conductivity modifiers (col 4 ln 56-60).

13. Regarding claim 19:

14. Tubing is a connector.

15. Claims 8-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pfleger (US 5,792,532) in view of Memon et al. (US 5,451,624) as applied to claims 2-4, 7, 13-14, 19, 21, and 22 above, and further in view of Tanaka et al. (US 4,376,856).

16. Pfleger in view of Memon disclose a composite comprising a modified polyacetal and a polyetheramide elastomer as explained.

17. They are silent with regard to the composition of the polyetheramide elastomers.

18. Regarding claims 9-12:

19. Elastomers having the presently claimed structures were well-known in the art. For example, Tanaka et al. (hereafter Tanaka) disclose polyetheramide elastomers containing (A) aminocarboxylic acid, (B) polyoxyalkylene glycol, and (C) dicarboxylic acid (col 1 ln 60-68). Such a polyetheramide would comprise repeating units corresponding to the presently claimed (I) and (III). The aminocarboxylic acids include aliphatic compounds such as 11-aminoundecanoic acid, which forms nylon-11 (col 2 ln 15-27). (B) can be polyethylene glycol, polypropylene glycol, or polytetramethylene glycol (col 2 ln 28-36).

20. Tanaka discloses polyetheramides have excellent properties such as impact resistance and elasticity (col 1 lines 52-55).

21. At the time of the invention, it would have been obvious to one of ordinary skill in the art to use conventional polyetheramide elastomers, e.g. as taught by Tanaka, as the polyetheramide elastomer in

the composite taught by Pfleger to arrive at a composite having desirable qualities such as excellent impact resistance and elasticity.

22. Regarding claim 8:

23. Given the polyetheramide elastomer taught by Tanaka is the same that presently claimed, the examiner takes the position that the elastomer of Tanaka intrinsically has a hardness within the presently claimed range.

24. Claims 2-4, 7, 13, 19, 21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mutsuda (US 6,517,949) in view of Memon et al. (US 5,451,624).

25. Regarding claims 2-3, 7, 13, 19, and 21-22:

26. Mutsuda discloses a composite having (A) a POM layer and (B) a thermoplastic elastomer layer (col 1 ln 51-65). The elastomer includes polyamide-based elastomers (col 3 ln 41). The POM can include conventional additives known in the art (col 2 ln 54-60).

27. Mutsuda is silent with regard to specific core-shell modifiers.

28. Impact modifiers based on methyl methacrylate-butadiene-styrene (MBS) core-shell polymers were well known. For example, Memon discloses the use of these polymers to improve the toughness of POM (col 2 ln 54-68). Memon teaches a loading of 5-50% by weight (col 3 ln 41-43).

29. At the time of the invention, it would have been obvious to one of ordinary skill in the art to use MBS core-shell polymers with the POM layer of Mutsuda to improve the impact resistance and toughness of said layer.

30. The present claims are written in a product-by-process format. The examiner takes the position that the final composite structure of the tubing taught by Mutsuda combined with Memon would be indistinguishable from the final product of the presently claimed invention, as both describe a layer of POM adhesively bonded to a polyamide elastomer.

31. With regard to the presently claimed tensile bond strength limits, the examiner takes the position that the composite tubing of Mutsuda combined with Memon intrinsically satisfies Applicant's requirements given that the composite has the same structure as claimed.

32. Regarding claim 4:

33. The layers comprise modifiers such as stabilizers, plasticizers, *etc*. (col 2 ln 54+; col 4 ln 1+).

34. Claims 8-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mutsuda (US 6,517,949) in view of Memon et al. (US 5,451,624) as applied to claims 2-4, 7, 13-14, 19, 21, and 22 above, and further in view of Tanaka et al. (US 4,376,856).

35. Mutsuda in view of Memon disclose a composite comprising a modified polyacetal and a polyetheramide elastomer as explained.

36. They are silent with regard to the composition of the polyetheramide elastomers.

37. Regarding claims 9-12:

38. Elastomers having the presently claimed structures were well-known in the art. For example, Tanaka et al. (hereafter Tanaka) disclose polyetheramide elastomers containing (A) aminocarboxylic acid, (B) polyoxyalkylene glycol, and (C) dicarboxylic acid (col 1 ln 60-68). Such a polyetheramide would comprise repeating units corresponding to the presently claimed (I) and (III). The aminocarboxylic acids include aliphatic compounds such as 11-aminoundecanoic acid, which forms nylon-11 (col 2 ln 15-27). (B) can be polyethylene glycol, polypropylene glycol, or polytetramethylene glycol (col 2 ln 28-36).

39. Tanaka discloses polyetheramides have excellent properties such as impact resistance and elasticity (col 1 lines 52-55).

40. At the time of the invention, it would have been obvious to one of ordinary skill in the art to use conventional polyetheramide elastomers, e.g. as taught by Tanaka, as the polyetheramide elastomer in the composite taught by Mutsuda to arrive at a composite having desirable qualities such as excellent impact resistance and elasticity.

41. Regarding claim 8:

42. Given the polyetheramide elastomer taught by Tanaka is the same that presently claimed, the examiner takes the position that the elastomer of Tanaka intrinsically has a hardness within the presently claimed range.

Claim Rejections - 35 USC § 112

43. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

44. Claims 2-4, 7-13, 19, and 21-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

45. Independent claim 21 recites a composite “comprising consisting of.” It appears Applicant intended to delete “comprising,” but clarification is requested.

46. Claim 21 also recites forming a molding of a polyacetal component and “overmolding one or more moldings." As it appears Applicant intends to recite exclusive language for the composite, i.e., “a composite consisting of a polyacetal component and a thermoplastic polyamide elastomer component,” it is unclear how there can be “one or more moldings” on the polyacetal component given the claim only defines one thermoplastic polyamide elastomer component.

Response to Arguments

47. Applicant's arguments filed 3 May 2010 have been fully considered but they are not persuasive.

48. Applicant submits the Pfleger’s claim 30, which depends on claim 8, requires the presence of an intermediate layer between the POM and TPEA layers (p7).

49. The examiner notes it is unclear whether present claim 21 uses exclusive language as discussed in rejections under 35 USC 112. That notwithstanding and in good faith toward Applicant’s attempted amendment, however, the examiner notes claims 9 and 22 of Pfleger recite an inner layer of polyacetal without the use of an intermediate layer. Therefore, Pfleger does not require the use of the intermediate layer as stated by Applicant.

50. Applicant notes that although Mutsuda discloses thermoplastic polyamide elastomers in conjunction with polyacetal, there is “no disclosure of any actual embodiments of polyacetals adhered to polyamide components” (p8).

51. However, "applicant must look to the whole reference for what it teaches. Applicant cannot merely rely on the examples and argue that the reference did not teach others." *In re Courtright*, 377 F.2d 647, 153 USPQ 735,739 (CCPA 1967). The fact remains Mutsuda discloses thermoplastic polyamide elastomers can be adhered to polyacetal.

52. Applicant submits the melt temperature of 200˚-320˚C applied during molding is critical to the invention whereas Mutsuda requires temperatures of 120˚-200˚C (p9). Applicant points to the Examples in the specification for support for Applicant's submitted criticality range.

53. The examiner first notes Mutsuda discloses higher temperatures, including values up to 220˚C are permitted (col 5 ln 11). Therefore, it would appear Mutsuda overlaps with Applicant's critical range.

54. Also, the data provided in the examples is not persuasive for the following reasons:

55. First, the data are not commensurate in scope with the present claims. The Examples test the properties of specific polyoxymethylene copolymers with specific additives in conjunction with a specific polyetheramide elastomer. Independent claim 21 recites broadly a "polyacetal component" and a "thermoplastic polyamide elastomer" and lists modifiers not tested, e.g., polycarbonate.

56. Second, the one example of a polyacetal component without a modifier (Example 3) still provides enough adhesion (0.9 N/mm^2) to meet the requirements of claim 21, i.e., it is at least 0.5 N/mm^2.

57. Finally, the data do not show the criticality of temperature as the temperatures range from 240˚-290˚C, but do not show the criticality of the lower end of the temperature range, i.e., 200˚C. Applicant submits Example 12, conducted at 290˚C, shows the criticality of a melt temperature of 220˚-280˚C set forth in present claim 22. However, the examiner notes claim 21 still recites the broader range of 200˚-320˚C. Also, as noted Example 12 only provides data for a single, specific type of polyacetal with a specific modifier in conjunction with a single, specific type of polyetheramide elastomer.

58. Applicant submits Tanaka fails to disclose the incorporation of the acid group taught by Mutsuda and therefore an artisan would not seek to modify Mutsuda with Tanaka (p9).

59. While the examiner agrees Tanaka is silent with regard to the addition of the acid group taught by Mutsuda, one of ordinary skill would recognize Mutsuda's method can be used in conjunction with thermoplastic polyamide elastomers already known in the art, including those disclosed by Tanaka, to

create a composite having a polyacetal component and a thermoplastic polyamide elastomer component: Mutsuda teaches how to add the acid group (col 3 ln 44-56).

Conclusion

60. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Freeman whose telephone number is (571)270-3469. The examiner can normally be reached on Monday-Friday 9:00-6:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on (571)272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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